DOCUMENT RESUME

ED 411 548 CS 216 018

AUTHOR Christopher, L. Carol
TITLE Journalistic Skills in the Digitalized Newsroom.
PUB DATE 1997-05-00
NOTE 26p.; Paper presented at the Annual Meeting of the International Communication Association (Montreal, Quebec, Canada, May 22-26, 1997).
PUB TYPE Information Analyses (070) -- Opinion Papers (120) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Computer Mediated Communication; Editing; *Journalism; Labor Problems; *Newspapers; *Organizational Change; *Technological Advancement; *Work Environment
IDENTIFIERS Pagination; Technological Demands; *Technology Integration

ABSTRACT

This paper explores three different implementations of technology in newsrooms: electronic editing, pagination, and computer-assisted reporting. Also examined are the ways in which newspapers are using newsroom technology both to gain greater control over the content and appearance of the newspaper and to gain greater control over the labor process of workers in the interest of the accumulation of capital. It concludes with an examination of new forms of work organization in the newsroom, linking considerations of the social construction of reality by major media corporations with questions raised by labor process analysts, especially H. Braverman, H. Shaiken, and S. Zuboff. Noting that labor process analysts challenge the social agreements between management and labor, the paper points out that these analysts question which work, rights, and powers accrue to owners/managers, and which to labor. A concern among labor process analysts is that while the technological demands of work require greater education, training, intelligence, and mental effort, workers and society find conditions of industrial and office labor increasingly unstable, unsatisfactory, and characterized by mindlessness, bureaucratization, and alienation. The paper contends, for example, that journalism schools are under increasing pressure to ensure that graduates have adequate technical skills by the time they enter the newsroom--unless students are required to take more courses, rookie journalists may come to newsrooms with less knowledge of traditional skills and practices. (Contains 25 references.) (NKA)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 411 548

Journalistic skills in the digitalized newsroom
ICA, Montreal, May, 1997

L. Carol Christopher
Department of Communication
University of California, San Diego

CCHRISTO@UCSD.EDU
888 Vermont St. # 212
Oakland, CA 94610
(510) 444-7841

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

L. C. Christopher

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CS216018

BEST COPY AVAILABLE

Journalistic skills in the digitalized newsroom

Technological change takes place in both a social and a historical context, existing both internal and external to the organization; each context is embedded with interests, beliefs, and values about social status, the nature of meaningful work, and what problems technology can or should solve (Thomas, 1994, p. 4). Technology makes journalistic work more abstract in numerous ways and thus changes the nature of journalistic skill: The first-hand sentience—the sounds and sights and smells of the production of the printed word and, increasingly, human interaction as a central facet of journalists' work are increasingly displaced by electronic and computerized texts and interactions. Technology serves as a means of rationalizing journalistic work in a way that removes, erodes, or creates opportunities for communicative and coordinative activities in the newsroom, and it also presents opportunities for extending old skills and creating new ones.

Increasingly, communication theorists have begun to focus on the socially constructed nature of reality, and to examine the workplace as a potential site of conflict over different interests in decisions regarding products, our culture, and our environment (see, for example, Deetz & Mumby, 1990). Computer technologies are not neutral: they have inherent characteristics that constrain their potential in the workplace, since much of what has driven the design, development, and deployment of workplace technology is that it can be controlled more easily, and is more subject to rational principles, than humans. Machines do not tire or object to repetition or rationalized activities as do humans, and are more consistently capable of precision, thus rendering production processes more predictable, and creating a more secure environment for capital investment and profit.

Newspapers are a social construction of reality—a representation of what's important to know, and by extension, what isn't—which occurs as journalists jointly participate in the selection, framing,

and presentation of events and ideas which then become The News. But this construction is also influenced by decisions and processes external to the newsroom—including decisions about labor, about profit, about technology. This paper explores three different implementations of technology in newsrooms: electronic editing, pagination, and computer-assisted reporting, as a means for examining the ways in which newspapers are using newsroom technology both to gain greater control over the content and appearance of the newspaper, but also to gain greater control over the labor process of workers in the interest of the accumulation of capital. It concludes with an examination of new forms of work organization in the newsroom. In doing so, it links considerations of the social construction of reality by major media corporations with questions raised by labor process analysts, especially Braverman, Shaiken, and Zuboff. Labor process analysts challenge the social agreements between management and labor, which they see as resting on yet another social construction of reality — a set of practices, a discourse, a historical process. They question which work, rights and powers accrue to owners/manager, which to labor; among their concerns is that while the technological demands of work require greater education, training, intelligence, and mental effort, workers and society find conditions of industrial and office labor increasingly unstable, unsatisfactory, and characterized by mindlessness, bureaucratization, and alienation.

Braverman, for example, challenged modern social science accounts of the organization of modern industry that "accept all that is real as necessary, all that exists as inevitable, and thus, the present mode of production as eternal," by providing a concrete and historically specific analysis of the relationship between technology and machinery on the one hand, and social relations on the other (Braverman, 1974, pp. 16-17).

Shaiken argues that technological development is a consequence of both social and economic choice, and that the workplace is shaped by the interaction of workers, managers, and technology (Shaiken, 1986, p. 13). Management, whose goals shape the design and implementation of technology in the workplace, seeks to control production as well as the activities of workers. Technology, and particularly information technology, may be designed in a way that leads to reduced skills and levels

of worker input and decision making, as well as tighter control over work and workers' activities. The result is boring, stressful work.

While managers seek higher productivity from such a system, its actual costs may be lowered productivity and quality, since a system that reduces human input cannot benefit from human skill, talent, experience or creativity. The effects of management decisions, however, may be mediated by a broad range of factors, such as the nature of the industry and technology design, as well as the presence and strategies of organized labor. For example, in the newsroom, it isn't just journalists who lose: Newspaper management and readers alike lose the benefits of synergy that comes from creative, often casual, human interactions.

Zuboff argues that working with computers offers a new way of knowing the world: Computerized work is more mediated than older technologies—workers must deal with an increasingly symbolic, or abstract, world, relying more heavily on their computers and less on their own sentient experience of the world (see Zuboff, 1988, p. 75). Depending on the choices made about the deployment of information technology, workers may gain communicative and coordinating skills and intellective competence, or they may be pushed "further into the sentient but mute terrain of fatigue and nervous exhaustion" (Zuboff, p. 123).

Since the early 1970s, newsrooms have seen the introduction of VDTs (video display terminals), pagination, libraries, on-line and database research, remote transmission and delivery, photo desks (enhanced color capabilities and digital photo transmission and storage) and photo editing capabilities — not to mention the new on-line onslaught. Many newspapers, in conjunction with the installation of new computer systems, have also remodeled their newsrooms so that they, in the words of more than one journalist, "look like an insurance office" more than the newsrooms of the recent past.

The capital investment decisions that result in the arrival of shiny new newsroom technology in the newsrooms are made in complex environments. As Thomas contends, we must "conceive of the relationship between technology and organization as mediated by the exercise of power, that is, by a system of authority and domination that asserts the primacy of one understanding of the physical

world, one prescription for social organization, over others" (Thomas, p. 5). Corporate owners and managers see in these technologies a means for lowering labor costs, expanding old markets and reaching new ones — in short, a means for increasing profits. The technological choices a manager makes represent her/him symbolically within the organization; the selection of a particular technology may be a way of gaining status or influence within the organization, and influencing or sabotaging its goals (Thomas, p. 6). In a 1994 speech, George R. Cashau, former senior vice president/technology for the Newspaper Association of America, stated that to be useful to newspapers, technology must, in addition to positioning newspapers as key information providers, produce revenue, be faster, more efficient, economical, and easy to use. By way of contrast, George Gerbner writes that "the basic problem of journalism is... media conglomeration and the consequent reduction of staff, diversity, and *time* to do an adequate job. For journalists, [newspaper technology] means further loss of control to a few wholesalers and global marketers of media 'software' " (Gerbner, 1995). Owners, managers, journalists, and technicians have different interactions with these technologies, and the technology leaves different marks on the work of each of these groups. Thus, for each group the technology has a different meaning.

Electronic editing

Electronic editing was the first step toward a fully computer-paginated newspaper, one in which entire pages are typeset, rather than typesetting each story, headline and caption individually and then pasting them up in the composing room, or backshop. Pagination reduces the amount of work that must be done in the backshop, and consequently the number of positions in that area. The editor's function expanded to include the remaining tasks — responsibilities such as typesetting, printing, and proofreading — which had formerly resided in the backshop (Kurtz, 1980, p. 55). Not only were there more tasks, but they were tasks that demanded the skill to accomplish them in the abstract world of the computer, rather than the concrete activity of the backshop (Zuboff, p. 126). Despite greater newsroom control over copy flow and improvements in mechanical accuracy, there were costs in other areas. For example, as wire copy (i.e., stories transmitted by news services, such as the Associated Press, United Press International, or Reuters) began to arrive in the newsroom at 1,050 words per minute

around 1976 (compared to 66 words perminute by teletype, the prior technology). By the late 1980s, wire editors, who had previously received hard-copy printouts or had to feed paper tape through a reader before seeing a story, were now receiving copy electronically — at nearly ten times the speed at which it had been sent with the arrival of VDTs, roughly ten years before. And with the increased transmission speed came an increase in the number of transmissions. Transmission speeds get faster, and volume continues to increase as the technological capacity for sending, receiving, storing and routing transmissions becomes more sophisticated and relatively more affordable: Editors in one study reported they were spending 97 percent of their time just pushing the buttons that released copy to other editors (Lindley, 1988, p. 486).Generally, editors disagree over whether typographical errors were harder or easier to spot on the computer screen than on paper copy. Speed sometimes came at the cost of good editing (Lindley, p. 487).

This early experience with technology brought with it other concerns as well: quality of work life, editor reactions to the technology outside of actual job performance, and whether the demand for technological competence infringed on journalistic quality. Many copy editors rejected the idea that they had been turned into technicians, and strongly disclaimed the notion that VDTs had depersonalized copy editing. Others, however, found the opposite to be true — for them, the work had become depersonalized and isolating, and the newspaper's quality suffered. Many missed the support of the now-mostly-eliminated proofreaders. There was wide disagreement over whether VDT editing required higher concentration or skill than paper editing, suggesting a demand for higher technological skill, but no increase in editing skill requirements.[1] Most editors felt that newspapers had become more sophisticated, but that the increased sophistication related more to production process than content. They also expressed concern over the new potential for top-rank editors to read over the shoulders of reporters, city editors, wire editors and copy editors (Lindley, p. 489), and over the effect of electronic editing on the quality of their work. Just as the technology brought with it an increased volume of wire

[1]Although the notion of skill as quantifiable is debatable, I have used Lindley's terms, which suggest that he sees skills as quantifiable, to represent his findings. Newspapers sometimes offer "skills testing" before hiring an editor in order to measure/quantify/evaluate those skills.

copy at an increased speed, for many editors, VDTs and the higher number of tasks that came with them meant that there was less time for the more traditional tasks they saw as their primary journalistic responsibility. The demand for technological skill also took time away from editing. There was an awareness that tension was building between the concurrent demands for technological and traditional skills.

Editors who had worked through the transition from pencil editing to electronic editing were most likely to be aware of these and other effects. Many of these older employees have either reached retirement age or been 'bought out' during downsizing and merger scenarios. Findings of future research will reflect the different experience of the greater number of workers who have been working with computer technology at least through college or the beginning of their journalism career. Compared to earlier journalists, these newsroom workers are more likely to accept a workplace permeated by technology without question — to them it is part of a "natural" progression, rather than an issue arising from changing patterns of ownership or economic control, and the subsequent choices that have led to shifting definitions of journalistic skill and quality.[2] Both the constraints and liberating qualities built into existing technologies by a steady historical stream of social choices will influence the way new generations of journalists see their own skills, their ability to control the products of their labor, and the nature of relations of power in their workplace.

Information technology in the newsroom has had, in some ways, a reintegrative quality in the newspaper—reintegrating, in one job, tasks that had been rationalized, or specialized into many separate jobs. But the new technology brought not only new ways of doing old things, but also the capability for new ways of doing new things. Newsroom managers had to consider new ways of

---

[2] See Zuboff, p. 13: "The most treacherous enemy of such research is what philosophers call 'the natural attitude,' our capacity to live daily life in a way that takes for granted the objects and activities that surround us. Even when we encounter new objects in our environment, our tendency is to experience them in terms of categories and qualities with which we are already familiar. The natural attitude allows us to assume and predict a great many things about each other's behavior without first establishing premises at the outset of every interaction. The natural attitude can also stand in the way of awareness, for ordinary experience has to be made extraordinary in order to become accessible to reflection.. Awareness requires a rupture with the world we take for granted...."

organizing newsroom work to accommodate the changes. Newsroom transformation showed up in a number of areas. Among them was the creation of newsroom positions to help traditional journalists manage technological change: computer system editors/managers, usually with previous newsroom experience, provide training, advice and troubleshooting for the newsroom. The new technology provided them, and by extension, newsroom managers, with the information necessary for quantitatively assessing the performance of newsroom workers. The flow of work in the newsroom could be surveyed abstractly and symbolically. The skill to interpret that information was most often held by supervising or systems editors and technicians, and was used most frequently for settling deadline disputes with the composing room.

Management-level editors remained the locus of technology-related decision-making, and the decision-making structure itself remained hierarchical. These editors/managers, who often had worked in several newsrooms, became increasingly accustomed to seeing and including large line item numbers on their budgets for technology as it became a more familiar feature of virtually every U.S. newsroom,[3] as they became accustomed to greater control over the production process and demanded ever greater speed, and as newspapers gained an increasing awareness of the added value that strategic combinations of information, technology and management can bring. One early example was the ability to put out more editions with broader geographical dispersion than before (e.g., Diamond, 1993, p. 235; Kurtz, p. 57). So-called "zoned editions," with advertising and news tailored to discrete geographical areas, followed not long after.

Pagination

New data-compression technologies, plus cheaper disk storage media, have helped fuel the move toward pagination for newsrooms. But another technological shift also has contributed to the increased presence of pagination systems—the arrival of desktop publishing technology in the

---

[3]Here are projected capital outlays for 1993-94 compared to actual 1994 outlays for newsroom technologies nationwide: Editorial computers: projected, $58,622,386 vs. 1993 actual, $49,370,951; Electronic library systems: projected, $5,394,787 vs. 1993 actual, $2,322,147; Digital darkroom, editorial photo department, electronic picture desk: projected $12,294,799 vs. 1993 actual, $9,248,994. Source: NAA Tech News, June 1984. p. 3.

BEST COPY AVAILABLE

newsroom. With the graphical user interface (GUI), work that once involved a fairly high level of craft or systems competence can now be produced by novice users in minutes. Further, as this interface has become the primary platform for newspaper graphics, a service industry has grown to provide those graphics—either standard or customized—via dial-up or automatic telecommunications transmissions. Work once done in the backshop or later, the newsroom, now is often produced by a service bureau, which distributes material for newspapers across the country and across the globe. The choices of technology for producing camera-ready materials—such as ads, typeset stories, design elements, or whole pages, which are then used to produce printing plates for the presses—for both the newsroom and the advertising department have broadened considerably. Where the decision to buy a newsroom system was once mostly one of selecting which vendor from whom to buy, increasingly it involves a choice between proprietary or off-the-shelf systems, and often the ability to integrate the two—always with an eye open to the need for support and new developments that might render current choices obsolete.

While most newsrooms want to maintain control over their work flow, often the people who make decisions about the purchase and deployment of technology come from very diverse backgrounds, ranging from data processing to typographical production (composing) to journalism, which all offer very different perspectives on how, and toward what ends, work should be organized. Often, there is no lost love, or respect, among these different groups. While this kind of technology obviously has a direct impact on work organization, it also creates new ways to evaluate where the bottlenecks in newsroom production exist.

The decisions that drive the choice of pagination technology are usually based on recommendations from the management information systems manager or some equivalent title, whose background is primarily technical, in conjunction with recommendations from newsroom systems managers or mid-level managers, such as assistant managing editors. Discussions of implementation strategy are usually limited to how quickly training could be accomplished, and how much knowledge different types of workers in the newsroom need. Discussion about loss of traditional skill, job enrichment, or increased cognitive effort rarely evolve, most likely for two reasons. First, the worlds of

newspaper management versus critical discussions or academic research rarely converge. When they do, they represent a collision of purpose: The broad social context in which social scientists situate the problems which newspaper managers must solve to keep their jobs and satisfy corporate shareholders provides little in the way of immediate relief to these problems. Secondly, the success of these managers is measured by traditional goals and understandings of efficiency and cost savings, as well as quality, rather than by the standards of a highest common good which social scientists tend to seek (e.g. Underwood, 1993).

Pagination is generally acknowledged to save time in the overall page-production process, since it is faster to typeset the entire page as one element than to set each story, headline and caption on a page individually, and then paste them up. If however, pagination requires more time in the newsroom and additional editors are not hired, then, as Russial (1994c, p. 93) hypothesizes, the quality of the paper likely will suffer, depending on the amount of time that editors spend doing electronically what was once done manually in the backshop.

Newsroom management wants pagination because it gives editors greater control over the appearance of the page, and because it gives them greater control over meeting deadlines. Increasingly, the digitalization of all information—graphic and text-based — that appears in the paper or is collected by the newsroom is appealing because of the possibilities for adding value through "recycling" the information through other media such as fax and electronic newspapers, and audiotext, videotex, and online products. Pagination has improved quality control and led to *better-looking newspapers*. The tradeoff in some instances, however, is *diminished content quality*, as well as editors who spend less time on traditional editing tasks and pay more attention to production demands: "a majority of those surveyed spent 20 percent or more of their time on former backshop functions" (Underwood, Giffard, & Stamm, 1994, p. 120). As with electronic editing, the more time editors spent on pagination, the less time they had for traditional journalism tasks.

Russial found that the "makeup" portion of the job — that which had transferred from the backshop to the newsroom — takes about twice as long as the more traditional editor's work, which is

the creative page design process. Pagination systems are, at many newspapers, contributing to what Underwood, et al (p. 116) , called a hybrid newspaper employee — one whose work combines the functions of copy editor, newspaper designer and paste-up specialist.[4] One editor estimated that 60 percent of the work done on his design desk had once been done in the composing room, and in that instance, because photos were paginated as well as text, the pagination process took triple the time spent on page design (Russial, 1994c, p. 97).

Russial's study shows that paginating editors felt that their workload was increased and that it reduced the time they had for "traditional editing tasks." Pagination also appeared to increase the proportion of essential tasks, and, in particular, those that were relatively mechanical or routine (Russial, 1994c, p. 98). Editors on deadline may be forced to reassess their editing priorities, asking themselves whether there is time, for example, to check facts, rewrite twisted prose, write a better headline, or monitor legal concerns. An editor's decision about this is an important element in the quality of the newspaper, since the copy desk is the last stop in the newsroom before the words on the screen become the printed facts which we comfortably construe as news and reality (Russial, 1994c, p. 98). The guidelines for making such decisions may be changing, since, as we've seen, editors are assuming more responsibility for the production work that determines at the most basic level whether the paper gets published. In light of the changing composition of their work, the more traditional emphasis of editors' tasks on accuracy and clarity may take a backseat to their production responsibilities.[5]

---

[4]While it does not necessarily follow that this new organization of work will lead to fewer employees doing the same work, newsroom managers nonetheless acknowledge that these new jobs are designed to allow for that possibility.

[5]. Russial's study (1994c, p. 98) is useful in looking at the impact of pagination technologies on the amount of time and the type of work that editors are doing. However, as newspapers increasingly see themselves as "information companies" selling a broad range of products based on the same information database, pagination becomes not an end point in the information production process, but a stop along the way: Information, once in the digital form used for pagination, can be easily manipulated and repackaged for a variety of other media uses -- including on-line access to newspaper libraries for both inhouse and public use, electronic newspapers, audiotext, fax newspapers, and Web pages. Thus, while it may take an editor as long to paginate a story as it did to have it composed by hand in the backshop, the newspaper benefits because the information remains in digital form and does not necessarily have to be reworked for other uses. Nonetheless, the more important question he raises addresses how a shift in their work composition affects the quality of the content.

Management also expressed concern in some instances over the development of a "production mind-set," noting that paginating editors seemed less eager to redraw pages between editions. "[Pagination] shatters a lot of the feel for journalism that editors [should] develop early on. I've seen it in action. ... People behave like a production department... I'm not sure what the solution is" (Russial, 1994b, p. 16). Russial also found that moving production functions into the newsroom replicated, between paginating and non-paginating editors, tensions traditionally found between news and production. Pagination skills are increasingly a baseline requirement for hiring new editors, but editorial management may still be uncomfortable with the idea of a production functionality residing in the newsroom (Russial, 1994b). Some editors see pagination as "part of a relentless march in which technological imperatives continue to drive newspapers and override the journalistic mission of the newsroom," and to express concern that news organizations have become preoccupied with "the looks and style of the newspaper at the expense of content and journalistic substance..." (Underwood et al., p. 124). Again, editors with less experience seem less troubled by the changes.

Reporters in the electronic newsroom

While, unlike editors, their traditional role may not have changed, reporters nonetheless experience pressure to learn the whys and wherefores of new information technology. Of course, introducing VDTs to reporters also meant reducing the need for rekeyboarding stories, as well as lost jobs or retraining for the people in the backshop who had traditionally rekeyed them. And when there were computer problems, reporters found themselves frequently reliant on computer technicians who often had neither an interest in, nor a clue about, deadlines or journalism and its nobler pursuits in the interests of humankind. By the early 1980s, reporters were being drawn into a new level of computer use as newspapers increasingly turned the burgeoning stacks of clips, which tend to decay or become lost in various newsroom shuffles, into electronic libraries, or morgues.

BEST COPY AVAILABLE

As off-the-shelf PC clones began to replace proprietary VDTs in newsrooms,[6] breakthroughs in networking technologies and computer architecture made it possible to connect personal computers (PCs) to mainframes, and in many instances replace them. In a 1984 survey, more than half of the 600 newspapers responding were making use of PCs somewhere in their operation.[7] Along with PC capabilities came the capability to put modems in the newsroom and allow reporters to dial up the burgeoning number of commercial and government databases available on line, and eventually through Internet connections. Koch argues that the primary tension involved in introducing electronic databases into newsrooms is between the apparent costs of the database systems' introduction and its benefit to the news gathering effort. But he also predicts changes in the content and narrative form of the news, as well as new forms of relations between "public information writers and their subjects." Journalists will gain greater flexibility, no longer bounded by "beats," leading, if you will, to more interdisciplinary coverage. This new organization of reporting will also change relations between newspeople, "who, in the past were divided by their respective responsibilities for a specific, topical specialty rather than united in their ability to focus on a story or issue" (Koch, 1991, p. xxv). He questions whether these "electronic resources" will "enhance or impede what might be called the 'minimal completeness and objectivity' criterion by which newspeople judge their own performance," but concludes that the derivative new form will finally allow "daily newswriters" to approach the standards they have "long asserted" (Koch, p. xxiii). Koch also predicts that newsroom managers should see improved productivity "as reporters are empowered to cover with increased criticality progressively broader classes of events" (Koch, p. xxiv).

Reporter use of electronic databases affords several potential benefits. It can make reporters less reliant on traditional sources, widen the considerations of their research, make more information

---

[6]Newspapers had long felt that they were held hostage by traditional newspaper technology vendors who manufactured "closed" systems in which the entire system — mainframe, software, terminals, printers, etc. had to be bought from the same vendor. Systems from different vendors, say in classified and editorial, were incompatible. With PC-type and networking technologies, newspapers began to push vendors to create "open" systems, where relatively inexpensive PC clones could be used in place of "proprietary" VDTs, which could cost as much as $15,000 or more, each.

[7]"Personal Computers are Booming but Problems are Looming," Presstime, July 1984, p. 45. Cited in Sohn, Ogan, & Polich, 1986, p. 168.

available to them, more conveniently, in less time. It provides an opportunity to enrich reporters', and by extension, readers' understandings of issues. On the other hand, it is also expensive, and may draw resources from other, equally or more important, needs in the newsroom. As reporters spend more time with on-line research, they are likely to spend less time with other types, such as interviews and observations. Research shows that reporters have tendencies to become dependent on database sources, just as they have with official and expert sources. However, research does not extend to considerations of what social, economic or internal political pressures may contribute to this dependence. For example, do chain newspapers encourage or discourage reporters to rely on databases more often than newspapers with different ownership structures? And while interdisciplinary news may present greater flexibility, it may also represent the loss of specialized knowledge which arises from intimate and regular contact with a subject. The best possibility is that these and other computer-assisted reporting techniques are used to enhance rather than replace traditional news-gathering techniques.

There are additional possibilities, of course. For example, print journalists already conduct an increasing number of interviews by phone. Greater reliance on database reporting is likely to further reduce the face-to-face contact they have with sources. Reporters acknowledge covering a growing number of major events without going to the scene.[8] In increasing newsroom use of computer-assisted reporting, managers will need to look closely at the tacit knowledge that successful reporters bring to their work. Interviewing may be a form of professional knowledge that is essential, a skill that will be destroyed or lost to the extent both that it is less practiced, and that newsrooms rationalize the work of reporters.[9] Print reporters already compete with increasing numbers of media outlets, and are having increasing difficulty gaining access to public figures.[10] Speculatively, if interviewing skills declined, access would become even more difficult. Reporters may find that although they approach interviews with greater in-depth knowledge and better questions, they have less of the tacit knowledge that they call on to persuade sources to talk openly with them. Journalist William Greider claims that, already,

---

[8]Robert Scheer quoted in Rosenstiel, pp. 23-24.
[9]Zuboff, p. 186, uses Michael Polanyi's description of tacit knowledge as "forms of meaning [that] are comprehensible only as a whole and can be destroyed when objectified and analyzed."
[10]Scheer quoted in Rosenstiel, p. 26.

BEST COPY AVAILABLE

"Most reporters aren't interested in finding out what happened. Most journalists are interested in finding out about news, which is another commodity, one interested in what's the angle today, or this week or tomorrow... They want to plug a hole in their story or give their pieces a voice to make their point" (Rosenstiel, 1995, p. 24).

Because of the costs of and the need for technical skills demanded by electronic research, reporters may have less control over what information is available to them than before. Research shows that they typically perform narrow searches that offer them information rather than understanding. The training they receive, in most instances, is designed to teach them basic commands, not the more complex skills needed to use the new technology as a means of developing a broader and more deeply contextualized news account. In other words, this kind of practice is likely to exacerbate the trend of treating events as discrete rather than linked, despite the potential that would allow opportunities for what many critics would see as "better" journalism, although Koch shows more optimism in his predictions for interdisciplinary beats and "empowered" reporters capable of greater productivity. The set of characteristics that can make a news product "better" is enormous. To date, conclusions about better newspapers through better technology have often accepted, unchallenged, the link between technical improvements in speed, accuracy, productivity and better news products. As applied to the latter, that link is highly suspect. As Weaver and Wilhoit point out, "Even though the bulk of U.S. journalists perceive new technological devices as improving the quality of their work and saving time, it may be that in the long run such devices will change the nature of the messages created by these journalists in ways that do not benefit the society at large"(1986, p. 159).

Depending on the balance between on-line database and royalty costs versus labor costs, managers also may find that, just as it is often less expensive to publish syndicated columns and features than to pay staff to write (Conniff, 1994),[11] it may be less expensive to draw research from on-line sources than it is to send reporters out to cover all but the most high-profile local stories. Although

---

[11]For example, Conniff (1994)writes in a column on newspaper-telephone company alliances, "Much of what many newspapers provide today is canned corn to begin with: a frequently bland diet of syndicated news, features, cartoons and columnists."

editors argued that "good reporting habits as traditionally taught" would overcome the downside of database use, it is clear from the experience of both copy and pagination editors that journalists do not always have discretion over their use of traditional skills. Journalism schools are also under increasing pressure to ensure that graduates have adequate technical skills by the time they enter the newsroom (e.g. McClain, 1994; Russial, 1994a). Unless students are required to take more courses, students may come to newsrooms with less knowledge of traditional skill and practices. As in other areas of the newsroom, there may be a tension between the demand for technical versus communicative skills.

It seems unlikely that databases will provide greater objectivity, since although information will be stored, retrieved and reproduced in a different form than before, it will continue to be gathered by humans. But increasing reliance on a narrower range of sources could lead to declining quality and standards of reporting and an increasing appearance of news stories which are little more than continually redigested and reinterpreted pieces of assembled data.

New forms of work organization in the electronic newsroom: The end of journalist specialization?

Newsrooms—and society generally—have gained more experience with technology, as well as a greater sense of its unexpected, or "unintended," effects. A new generation of newsroom managers includes former reporters and editors who underwent many of those changes. At the same time, newspapers are calling themselves information companies or information providers, and newsrooms are colliding with marketing departments and learning to think about how they can "add value" to the traditional news product. In this process of self-reconceptualization, newspaper companies have begun to reorganize the newsroom into teams, a form of work organization first linked to the flexible manufacturing processes in computerized industrial plants.

Newsroom work teams take several forms, often called design desks: some focus primarily on pagination and design, while others stress the creation of a "better-packaged story." Whether in newsrooms or manufacturing facilities, cross-training, so that employees are "interchangeable," is implemented either as a part of, or in conjunction with, the team structure. Russial's study of newsroom

pagination and work organization (1994c, pp.20-21) found that "newspapers are still experimenting with new forms of staff organization and job design. Technological deployment may be creating new organizational problems, for example, lack of leadership, skilled staff or other resources, and possibly limiting a newspaper's ability to change in other ways."

Many newsroom design desks handle layout and pagination almost exclusively, and are implemented to "control the look of the paper, speed and cost" (Russial, 1994c, p. 13). Design desks often lead to better looking pages and greater uniformity throughout the paper, as well as improved coordination among editors, designers and reporters. Editors sometimes report feeling more creative. Often, papers with design desks have created new job classifications to handle the reorganization of work. Page designers, who had more newspaper experience and were paid comparably to other editors, laid out pages and sections, while design assistants, who functioned as technicians and for whom newspaper experience was considered unnecessary, were paid substantially lower wages. One news executive was quoted as saying "We don't want to pay someone $800 a week to 'design' those holes. We want to get someone who can mass produce" (Russial, 1994c, p. 14).

Some other papers organize work so that more technically adept editors handle pagination, leaving other, perhaps less adept editors to more traditional tasks. Russial found that many editors acknowledged that it may be important for pagination to be done by editors, despite its technical nature, since "most editors felt more comfortable with other editors" making decisions about necessary adjustments such as trimming a story or photo or adjusting the layout. One newspaper based its decision about which pagination system to buy on the belief of editorial management that "it would allow the production function to be shifted to news professionals with the least degradation of their job and with the greatest opportunity to preserve editorial control over the many little decisions that must be made to implement the larger decision of drawing the page" (Russial, 1994c, pp. 15-16). Russial's study indicates that newsrooms feel some tension between, on the one hand, rationalizing design desk activities so that editors handle tasks which require high-level skills while technicians are assigned more routinized work, and on the other, recognizing the value of professional judgment and retaining maximum levels of editorial control.

Work team strategies also allow management to construct a newsroom more responsive to marketing needs by moving the newsroom away from its traditional assembly line structure in which "Stories are passed from reporter to editor to production with little communication in between. This structure facilitates the need to meet daily deadlines, not necessarily what works best for readers" (Auman, 1994, p. 129). For example, the "maestro approach" is, from its inception, a means of understanding what stories are important to readers and then matching the skills of the newsroom to the challenge at hand (Ryan, 1993, p. 21). It is intended to promote stories that evolve out of a process that focuses on readers' questions (Ryan, p. 22). The maestro, or team leader, directs, orchestrates, and referees, as well as reserves space and color, or "whatever it takes to tell the story in the most meaningful way for readers" (Ryan, p. 21). Auman found that newspapers also implement team strategies — creating teams of copy editors, photographers, page designers, and reporters — in orderto create a management tool that make newsroom employees and machines more effective in the overall activity of telling stories. Underlying this need is increasingly stagnant circulation which drives newspapers to seek new ways to attract readers, with many deciding that better organization and presentation of information are key.

Under ideal circumstances, teams can, as Auman suggests, restructure the newsroom production process in a way that brings together the issues of organization and presentation—integrating writing, editing and design; but she questions whether, in the process, content is subverted to art and presentation. At their best, teams reorganize traditional tasks to take advantage of new information technology potential as well as human creative potential. Yet depending on their makeup, they may emphasize design over content and cede control of the news to the design desk, and thus may represent a threat to traditional standards of quality based more on content than appearance.

In some newsrooms, design desk employees are cross-trained on a variety of tasks, so that "word people acquire visual skills, and visual people acquire word skills" (Auman, p. 139). To fill these positions, editors seek journalists with layout and design skills first, and news judgment second. Large papers rank Macintosh computer graphics skills third; papers with circulation under 100,000 placed a priority on more traditional journalistic skills, although many of them plan to use Mac-based

pagination systems. The successful design desk editor, concludes Auman, "is perhaps a new breed of journalist who has an integrated editing mind—who is a word person but who can integrate words with visuals" (p. 140). It is equally clear, however, that technical skill also ranks high.

Auman's study found that editors on design desks spent about half their time on page design and dummying, 15 percent on pagination, and the remainder on tasks such as headline or cutline writing, creating infographics, photo editing and coordinating people and elements in a story or project on a page—with some variation in task depending on the size of the paper (p. 131). Among these tasks, the more time a design desk spent on creating graphics, page design and pagination, and the less spent on headline writing, the more likely editors were to rate the desk a success. This is reflective of the hiring priorities that newspapers have established: Editors whose primary skills are in design and layout seem more likely to focus on presentation over content. Endeavors of this type would have been nearly inconceivable prior to newsroom implementation of desktop publishing technologies which provide flexibility in manipulating page elements and executing more complicated design concepts.

Applebaum and Batt (Applebaum & Batt, 1994) found that, in industrial work sites, systems of work organization similar to the above often include only a few select workers; the number of participants in workplace teams which have actual authority to make decisions is frequently limited to an upper echelon, already more empowered than most workers. The structure of newsroom teams replicates this by choosing primarily newsroom leaders with seniority as the team leaders. While other workers may have input, it seems likely that they ultimately have less influence than the leader.

One aspect of the logic behind design desks, however, seems to be to continue a trend toward automated production work that has been moved to the newsroom, which has already created a production mentality among some editors. By separating out the less skill-intensive work, managers are creating new entry-level work in the newsroom, sometimes and sometimes not an opportunity to develop skills or to find a stepping stone into better-paid and more skill-intensive positions. Managers recognize the importance of professional judgment and have designed the desks, in many instances, in ways that

BEST COPY AVAILABLE

leave the traditional hierarchical aspects of organizational decision-making intact. Newsroom teams, in some incarnations, may provide an environment that allows workers to broaden their skills and to contribute more creatively to projects, but these types of newsroom variations on teamwork remain nascent.

Conclusion

News is a social construction rooted in journalistic routines and practices, and newspapers are central tools we use to construct our own individual and collective senses of reality. Decisions about how to design and deploy information technology have changed some routines and practices of journalists at U.S. newspapers, and transformed understandings of what basic journalistic skills are. Journalists' work has traditionally required communicative and coordinative skills and the manipulation of symbols. Social choice about technological deployment and design have led some workplaces to replicate the nineteenth century logic of automation, in which work is alienating, meaningless to workers, and gutted of opportunities to show any but operational skill. Other choices have led to workplaces that encourage workers to develop new intellective skills and creativity in dealing with technological change. Technological change occurs in both social and historical contexts which exist both in- and outside the newsroom. Issues — as diverse as concern over social status, and interests, beliefs, and values about what constitutes meaningful work, and even the extent to which work should be meaningful, as well as what problems technology can or should solve — all influence whether a workplace takes one direction or the other. Often the people who make decisions about the purchase and deployment of technology come from backgrounds ranging from data processing to composing to journalism, which all offer very different perspectives on how, and toward what ends, work should be organized.

During the last twenty years, computers and computer skills have become integral to getting the news out, and editors, relatedly, have acquired increasing responsibility for production processes. In doing so, the emphasis on traditional journalism skills has shifted to share predominance with computer skills, which often reorients the nature of work from sentient toward abstract, sometimes

shifting emphasis from subtle features of journalistic accuracy, to the more immediate allure of technical precision. Editors' work is often more stressful than beforea. They frequently need more skills, and have a broader range of duties, less backup support, and earlier deadlines for more stories and more products—whether those products are zoned editions or Internet editions. A number of factors, including the shift from sentient to abstract work, increases in the pace and quantity of information flow into and within the newsroom, and the additional responsibility of producing divergent products, also have increased the pressure of this work in many contexts. Often, additions to staff have been not been commensurate with increases in the breadth and quantity of work.

Many workers, unable to affect the process of change, have responded by leaving the newspaper or the industry, taking with them their skill and experience, or by becoming demoralized and half-hearted in their work. They felt that the procedures of "technojournalism" were robbing them of the ability to produce a newspaper that met their expectations of quality, and leaving them with a technical skill that had little coincidence with their primary interest in the profession. Recent downsizing trends in the industry are likely to intensify and widen this response. Clearly, in such instances, it isn't only journalists who lose: Newspapers lose the contributions of motivated and engaged journalists, and they lose the synergy that comes from creative and sometimes casual human interactions. However, research into the effects of both team production and older methods of work organization indicate that unions have been an important factor in retaining quality production standards and protecting worker rights (e.g. Applebaum & Batt; Shaiken; and to a lesser extent Zuboff). But the fweaker union structuresound in newsroomse present even less threat to management control of the labor process than the strong printers unions, whose power was diminished with changes in production technology. As research into these questions continues, it will be important to evaluate the extent to which the same holds true in newsrooms.

Research into the deployment of information technology in U.S. newsrooms in forms of electronic editing and pagination shows that goals have been to reduce staff and increase profit and efficiency — to replace human bodies with machines, to speed processes, and to gain greater control over the labor process. The unintended consequences — reduced opportunities to utilize existing skills, less

meaningful work, as well as less control over their work — are often accompanied by worker demoralization and loss of product quality. This is not inherent in the technology, but is a result of the social choices that surround its design and deployment.

As computerization of newsrooms proceeds, it will be important to investigate whether new forms of work organization in the newsroom will provide journalists with the opportunities necessary to develop critical judgment and analysis skills that have traditionally been a primary requirement of journalistic practices. To date, available research shows that editors report a loss of traditional skill, and a more depersonalized and abstract environment. The direction of computer-assisted reporting remains ambiguous. Journalism schools are under increasing pressure to ensure that graduates have adequate technical skills by the time they enter the newsroom — a pressure that is increasing with the demand for on-line journalists.. Unless students are required to take more courses, rookie journalists may come to newsrooms with less knowledge of traditional skill and practices.

Will these newsrooms attract or keep people to whom the use and development of high-level versus operational skills is important? Are high-level skills fundamentally at odds with the prevailing logic governing the deployment of information technology in newsrooms? Among the consequences of the logic of automation, is that employees are eliminated, rather than challenged to participate as full members of the organization with equal stakes in improving quality and imagining new production possibilities. Despite the creation of derivative products and the need for new employees to produce them, the number of people required to produce *any given item* continues to decline with automation (see Zimbalist, 1979, p. 110). Often, experienced workers are seen as liabilities rather than assets. Those who remain in the newsroom may receive the training, education, opportunities, and structure that will help them develop the intellective skills that will enrich their jobs and add value, but the specter of unemployment will remain a destabilizing and corrosive undercurrent in the newsroom and in the news industry.

This has implications for society, of course, regardless of the product. But it matters more if the product is a newspaper, if the number of voices who participate in constructing this particular

BEST COPY AVAILABLE

"symbolic consumer product" declines, whether through departure from industry or because the work itself begins to quiet and dull journalists' curiosity and passion. While new opportunities for participation arise from new technological and media forms such as the Internet, even here it is likely that the logic of capital and accumulation will influence, if not shape, social choices in a manner that constrain the liberating potential of these new forms. The set of characteristics that can make a news product "better" is enormous. To date, conclusions about better newspapers through better technology have often accepted, unchallenged, the link between technical improvements in speed, precision, productivity and better news products.

Ultimately perhaps, the most central issues that these explorations will help to illuminate is what impact the reshaping of newswork and the reorganizing of American newsrooms will have on the final product—the information by which a community knows itself, and on which it bases its judgments. Since news is a social construction (Tuchman, 1978) that reflects not only society, but newsroom practices, it seems unlikely that a largely automated newsroom will be able to respond with spirit to the challenge thrown out to it in 1861—"It is a newspaper's duty to print the news and raise hell."[12]

---

[12] Quote is from the *Chicago Times*.

References

Applebaum, E., & Batt, R. (1994). The New American Workplace: Transforming Work Systems in the United States. Ithaca, NY: ILR Press.

Auman, A. (1994, Spring). Design desks: Why are more and more newspapers adopting them? Newspaper Research Journal, 15.

Braverman, H. (1974). Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century. New York: Monthly Review Press.

Conniff, M. (1994, December 17). The Leading Edge: The Enemy is Us. Editor & Publisher, 21.

Deetz, S., & Mumby, D. K. (1990). Power, Discourse and the Workplace: Reclaiming the Critical Condition, Communication Yearbook (Vol. 13,).

Diamond, E. (1993). Behind the Times: Inside the New York Times. New York: Villard Books.

Gerbner, G. (1995, January/February). Response to a technology column by Stephen D. Isaacs, "The Age of Iron Pyrite, Maybe?". Columbia Journalism Review, 5.

Koch, T. (1991). Journalism for the 21st Century: Online Information, Electronic Databases, and the News. New York: Praeger Publishers.

Kurtz, L. D. (1980, Summer). The Electronic Editor. Journal of Communication.

Lindley, W. R. (1988, Summer). From Hot Type to Video Screens: Editors Evaluate New Technology. Journalism Quarterly.

McClain, R. (1994, January). Journalism education should include more computer training. Newspapers & Technology.

Rosenstiel, T. (1995, January/February). Yakety Yak: The Lost Art of Interviewing. Columbia Journalism Review.

Russial, J. T. (1994a, August 13). Beyond the Basics: Mixed Messages about Pagination and Other Skills. Paper presented at the Joint Session of the Communication Technology and Policy and Newspaper Divisions of the AEJMC, Atlanta.

BEST COPY AVAILABLE

Russial, J. T. (1994b, August 13). Pagination and Newsroom Organization. Paper presented at the Joint Session of the Newspaper Division and the Communications, Technology and Policy Division of the AEJMC, Atlanta.

Russial, J. T. (1994c, Winter). Pagination and the newsroom: A question of time. Newspaper Research Journal, 15.

Ryan, B. (1993, March). Editing takes on a new look. Quill.

Shaiken, H. (1986). Work Transformed: Automation and Labor in the Computer Age. New York: Lexington Books.

Sohn, A., Ogan, C., & Polich, J. (1986). Newspaper Leadership. Englewood Cliffs, New Jersey: Prentice-Hall.

Thomas, R. J. (1994). What Machines Can't Do: Politics and Technology in the Industrial Enterprise. Berkeley, California: University of California Press.

Tuchman, G. (1978). Making News: A Study in the Construction of Reality. New York: The Free Press.

Underwood, D. (1993). When MBAs Rule the Newsroom. New York: Columbia University Press.

Underwood, D., Giffard, A. C., & Stamm, K. (1994, Spring). Computers and editing: Pagination's impact on the newsroom. Newspaper Research Journal, 15.

Weaver, D. H., & Wilhoit, G. C. (1986). The American Journalist: A Portrait of U.S. News People and Their Work. (2nd ed.). Bloomington, Indiana: Indiana University Press.

Zimbalist, A. (1979). Technology and the Labor Process in the Printing Industry. In A. Zimbalist (Ed.), Case Studies on the Labor Process. New York: Monthly Review Press.

Zuboff, S. (1988). In the Age of the Smart Machine: The Future of Work and Power. New York: Basic Books Inc.